FOREST MANAGEMENT IN ALBERTA

RESPONSE TO THE REPORT OF THE EXPERT REVIEW PANEL

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91-05873/

Pub. No.: I/409

ISBN: 0-86499-818-X

Printed June 1991

FOR COPIES OF THIS REPORT, CONTACT:

Information Centre
Alberta Energy/Forestry, Lands and Wildlife
Main Floor, Bramalea Building
9920 - 108 Street
Edmonton, Alberta, Canada T5K 2M4

Telephone: (403) 427-3590

or

Information Centre
Alberta Energy/Forestry, Lands and Wildlife
Main Floor, Britannia Building
703 - 6th avenue, S.W.
Calgary, Alberta, Canada T2P 0T9

Telephone: (403) 297-6324

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Expert Review Panel on
Forest Management
in Alberta

FOREST MANAGEMENT IN ALBERTA: RESPONSE TO THE REPORT OF THE EXPERT REVIEW PANEL

Sixty percent of Alberta is covered by publicly owned forests. Our forests are the source of the major rivers of the prairie provinces. They provide habitat for many of our species of wildlife and provide recreation for both residents and visitors to the province. These lands also provide the resource base upon which our forest industry, trapping, outfitting and guiding and much of the petroleum and natural gas industry depend.

The rapid increase in the forest industry over the past several years has coincided with a world wide interest and concern about the state of the environment. As a result of the large number of questions being asked by the public regarding the state of Alberta's forests and forest management, the Department of Forestry, Lands and Wildlife conducted a series of public meetings and open houses during the winter and spring of 1989 across northern Alberta to explain the province's system of forest management.

It became apparent during these meetings that the large number of questions raised by the public required independent professional comment and review. As a result, the Minister of Forestry, Lands and Wildlife appointed a panel of experts in forestry and wildlife management to consider these concerns and make recommendations to strengthen our forest management systems.

The panel consisted of:

- Bruce Dancik, professor and current chair of the Department of Forest Science, University of Alberta;
- Lorne Brace, forest research scientist with Forestry Canada;

- John Stelfox, wildlife research scientist formerly with the Canadian Wildlife Service and Fish and Wildlife Division, Alberta Forestry, Lands and Wildlife; and
- Bob Udell, forester in charge of forest planning at Weldwood of Canada, Hinton Division.

The panel's conclusions and recommendations were provided to the Minister in August 1990, in "Forest Management in Alberta: Report of the Expert Review Panel". The report was immediately released to the public.

The following provides a response to the main issues raised by the expert panel. Review of the report and its 133 recommendations led to identification of nine key subject areas, which cover the more important policy-related issues addressed in the panel's report. These are:

- integration of timber and non-timber resource values;
- public involvement;
- a forest conservation strategy;
- planning;
- protected areas;
- timber management;
- reforestation and silviculture;
- information, inventory and research; and
- staffing, funding and departmental reorganization.

Each of these areas is discussed in the following sections. In each section, "panel position" summarizes the issue as presented in the report. The relevant recommendations and report sections are listed. The department's response to the issues in the subject area follows.

Detailed technical comments to each of the report's 133 recommendations are included as an appendix to this report.

OVERALL RESPONSE

In general, the panel endorses our system of forest management in Alberta. Indeed the panel stated that "the present forest management system includes security of tenure, detailed forest management planning, and reforestation requirements unmatched elsewhere in Canada". In particular, they support forest management agreements as long-term, area-based tenures, our integrated resource planning program for setting land use priorities, clearcutting as an appropriate harvest method, ground rules as the key to operational management, and our system and standards for reforestation.

In many of the technical areas of the report, we are already implementing at least the spirit of panel recommendations. In other cases, the panel recommendation may be accepted in principle, but the current climate of budgetary restraint may delay some of the new program initiatives they propose. Some of these may be achieved by redesigning the programs we already have. Indeed, this is already happening.

The panel identifies the need for greater consideration of non-timber resources in forest management decision making. It is accepted that more needs to be done in this area, as detailed below.

The panel has also identified the need for greater involvement of the public in many of the more significant policy and planning decisions of the department. This too is accepted. It is recognized that many of the policy issues discussed by the panel require full public discussion before the department or the government makes revisions to existing policies. For this reason, many of the responses below must be tentative, pending development of the proposed Alberta Forest Conservation Strategy.

RESPONSE TO
Expert Review Panel on
Forest Management
In Alberta

ISSUE
INTEGRATION

PANEL POSITION

The panel identifies a need for greater integration of the needs of all resources and resource users into forest decision making. They specifically highlight fish and wildlife resources, but also identify others, such as recreation, tourism and trapping. They identify the levels of decision making where such integration ought to occur, from provincial policy to the allocation of resource rights to operational planning.

The panel also considers that the scope and internal structure of the department are an impediment to integration. Their reorganization proposals are discussed in a following section.

(Recommendation 4, 36, 39, 67, 68, 69, 70, 71, 72, 74, 76, 77, 79, 81, 85, 122; Section 1.0, 2.1, 3.1, 4.1, 5.3, 7.1, 7.2, 7.6, 9.1)

RESPONSE

"Integrated resource management" has been the stated philosophy of Forestry, Lands and Wildlife, and indeed the Government of Alberta, for over a decade. It recognizes that the use of any resource inevitably affects other resources, and that we must consider these resources together in making decisions. Timber harvesting and other timber management activities must take into account the needs of wildlife, recreation, fisheries, other resources and other industrial activities. Our goal is to provide economic and environmental benefits now, while ensuring that opportunities are maintained for future generations.

We carry out this integration through formal planning programs and referral procedures. It is also an important aspect of more informal contacts that are part of the day to day business of the department.

We can always do more, and the panel offers some useful ways that this can be done, each of which is being considered. The department is currently undergoing strategic planning - a comprehensive review of the business we are in, and how we ought to be conducting it. One of the key issues being discussed is how to more effectively cooperate and coordinate.

The panel's recommendations for organizational change are discussed in the final section of this document.

ISSUE
PUBLIC INVOLVEMENT

PANEL POSITION

The panel recommends greater public involvement in decisions that affect our forests, particularly those associated with large-scale disposition of timber resources. They also see a role for the public in policy development, integrated resource planning and forest management planning. They specifically recommend establishing:

- a provincial forest management advisory board;
- regional forest management advisory boards; and
- a forest management review panel under the Environment Council of Alberta, to periodically (they suggest every 10 years) assess our forest management practices.

(Recommendation 5, 6, 12, 13, 73, 128; Section 1.0, 2.1, 4.1, 9.3)

RESPONSE

The public, as the owners of almost all of our forests, have a legitimate right to a say in what those forests are used for and how they are managed.

Forestry, Lands and Wildlife already has well established and successful mechanisms for public involvement incorporated into many of the department's programs. These programs include:

- integrated resource planning;
- natural areas; and

- forest management planning undertaken by Forest Management Agreement (FMA) holders.

In future, meaningful opportunities will be provided to the public to have input into all major policies and major allocation decisions that affect Alberta's forests. Departmental staff are actively considering what programs would be enhanced by additional public involvement, and how it could best be carried out.

Alberta forest management advisory board (Recommendation 12(a))

Rather than establish an additional provincial advisory committee dealing with resource management issues, as the panel recommends, we will build on our positive experiences with the Alberta Integrated Planning Advisory Committee and the Fish and Wildlife Advisory Committee. ***These two existing committees will be combined and expanded. The resulting new committee will cover the entire spectrum of resource management policy issues under Forestry, Lands and Wildlife.*** It will provide a good forum for discussing the many issues that cut across sector lines and require integration, such as forestry impacts on wildlife.

Regional forest management advisory boards (Recommendation 12(b))

Under the departmental policy on public involvement announced in July 1990, many Forest Management Agreement holders are in various stages of establishing forestry environmental liaison committees composed of members of local interest groups. These committees should satisfy much of the intent of the regional boards proposed by the panel. The liaison committees must be given a chance to prove themselves before any decision is made on establishing other regional advisory bodies.

Forest management review panel (Recommendation 13)

The work of the expert panel itself would appear to largely duplicate the task of an Environment Council of Alberta (ECA) review body, if such a review were to be carried out in the near future. The policy development activities discussed below will provide further opportunities for discussion of the important issues.

Whether such a review will be needed in a decade, or another time in the future, would be a subject for the departmental advisory committee to advise the Minister of the day. In principle, such a review might serve a useful purpose at that time.

Whether the ECA is the appropriate body to conduct such a review will depend, in part, on the evolving role of that organization.

ISSUE

FOREST CONSERVATION STRATEGY

PANEL POSITION

The panel recommends that the government immediately complete the Alberta Conservation Strategy, especially for the forest sector. They further propose that a consistent department policy be developed, along with divisional policies that integrate and complement both. Subjects to be covered in these various levels of policy include forest administration, the granting of timber supply, old-growth forest and protected areas.

(Recommendation 7, 8, 9, 10, 58, 66, 87; Section 1.0, 4.1, 4.2, 6.4, 6.5)

RESPONSE

The timely completion of the Alberta Conservation Strategy is supported. The need for a consistent overall departmental policy and for more detailed sector policies is also recognized and accepted.

A Natural Resources Policy Framework will be developed which will provide a foundation for decision-making for the broad range of resources on public land in Alberta.

It will include broad policy statements and guiding principles relating to the management and administration of these resources. It may deal with such items as: disposition policy, economic rent, protected areas, access, public involvement and integrated resource management, to name several.

The Natural Resources Policy Framework will be followed by more specific sector policies such as the Forest Conservation Strategy, Fisheries Management Strategy, etc. The Forest Conservation Strategy will be undertaken on a priority basis. Coupled with the Natural Resources Policy Framework, it will cover all of the areas specifically recommended by the expert panel.

Public involvement will be an important part of the development of both the Natural Resources Policy Framework and the sector policies. The departmental advisory committee is expected to play an important role in advising on the scope of, and process for creating, these policies. The committee will also play a key role in developing the draft policy documents. As well as advisory committee involvement, all interested Albertans will have opportunities to have a say.

ISSUE
PLANNING

PANEL POSITION

The panel considers that the present integrated resource planning program "provides a practical, appropriate definition of land use priorities". They specifically say that recreation, tourism and trapping issues should be resolved in the context of these plans.

The panel recommends that FMA allocations and other forest management decisions be made in the context of the integrated resource planning system.

The report criticizes the methods that have been used for initial project assessment and public involvement. The panel recommends that public hearings on the social and environmental impact of forest development should not look at mill and forest issues separately. They say that any environmental assessment should include a review of recreational resources, endangered species, fish and wildlife habitat, rural lifestyle, wilderness experience, health and safety.

At the same time, the panel considers that "snapshot" assessments of forest management fail to give a good picture of a dynamic, evolving forest community. They recommend that rather than an Environmental Impact Assessment (EIA), what is needed is a dynamic forest management review and monitoring system, including public involvement, that ensures forest management practices are environmentally sound. They believe that these impacts can be best addressed by expanding and refining the ground rule process and by periodic independent audits of forest management.

(Recommendation 6, 69, 77, 78, 79, 81; Section 1.0, 2.1, 3.2, 4.2, 7.1)

RESPONSE

Integrated Resource Planning

We are pleased to see the panel recognizes that the integrated resource planning program "provides a practical, appropriate definition of land use priorities". Development decisions can be made more easily within the broad allocation framework provided by integrated resource plans — which areas ought to be available for potential forestry development, which should be candidates for ecological protection, etc. In future, integrated resource planning will occur in advance of specific project decisions, wherever feasible.

In the past, integrated resource plans were not always completed in an area before major forestry projects were proposed. Building consensus is a slow process, so these plans can take a long time to prepare. Planning priorities have been elsewhere, primarily in the Eastern Slopes and in areas with potential for agricultural expansion.

Integrated resource planning also has an important role to play in guiding the more detailed forest management planning conducted after projects are approved to proceed and forest management agreements are signed. Currently, the highest priority for completion of integrated resource plans is in these areas.

Initial Project Assessment

The initial project assessment and approval process that is evolving should address the panel's, and the public's, concerns regarding separate assessment of mill and forestry matters. There must be a single point where ***all*** of a project's environmental, social and economic effects can be considered together, so that Cabinet can weigh all factors when it makes the decision whether to approve a project. The proposed revisions to Alberta's environmental assessment legislation and the creation of the Natural Resources Conservation Board (NRCB) allow for this integrated consideration of new projects, including full public hearings where appropriate.

The NRCB will rule on the overall environmental suitability of a project, and may provide guidance on project design. It should consider all of the factors mentioned by the panel, including those related to forest management, ***but only at a level of detail needed for the overall project approval decision***. Information requirements for the application to the NRCB similarly ought to be appropriate to this level of decision.

FMA Negotiations

Following project approval by Cabinet, a Forest Management Agreement will be negotiated between the company and the Crown. The government will negotiate in light of any information or recommendations provided by the NRCB, including concerns and requests by the public. ***The actual negotiation, however, must remain bilateral, with the government negotiating on behalf of all Albertans.*** We believe that this is the only way that negotiations can meaningfully proceed.

EIA vs. Ongoing Management Planning

While comprehensive initial project review is important, we agree with the panel that environmental impact assessment is not an appropriate means to address the details

of ongoing forest management within a forest management area, because:

- the level of detail needed to make operational decisions is typically not available at the time of the decision whether or not to allow a project; and
- changing resources, advancing technology and evolving public values all have to be considered over extremely long time periods.

We need ***both*** comprehensive initial project assessment ***and*** an ongoing, dynamic planning system.

Forest Management Planning

Our well developed forest management planning system is designed to accommodate long-term ecological, social and technological change that one-time EIAs do not. We are pleased to note that the panel supports this system, including the important recent addition of full and open public involvement in the preparation of forest management plans.

ISSUE
PROTECTED AREAS

PANEL POSITION

The panel recommends that Alberta's system of protected areas representing significant ecosystems be completed. They consider that the review process for ecological reserves is adequate, but recommend that the process for selection of protected areas be improved and formalized. The panel recommends that the possibility of creating a boreal wilderness of a similar size as the existing wilderness areas be investigated.

They highlight the need to protect rare and endangered species, old-growth forest and representative forest ecosystems. At the same time, they recommend that we consider how maintenance of old-growth can be met through creative planning and management, rather than setting aside exclusive areas.

The panel recognizes a need to define what old-growth is and our objectives for it, what ecosystem components are essential to meet old-growth criteria and what we need to do to meet old-growth objectives. They recommend that old-growth be a subject of provincial forest policy under the Alberta Conservation Strategy.

(Recommendation 50, 51, 53, 57, 58, 59, 60, 62, 88, 90; Section 1.0, 5.3, 6.4, 6.5, 7.7)

RESPONSE

Alberta has a system of protected lands that includes wilderness areas, ecological reserves and natural areas. In addition, a variety of other designations provide a

significant degree of protection. These include provincial parks, recreation areas, forest land use zones and areas designated for protection under integrated resource plans.

We recognize, however, that the system as it currently exists remains incomplete. Increased effort needs to be made in completing our system of representative and significant ecosystems in order to adequately protect representative examples of the full environmental diversity of the province. In this regard, we embrace the spirit of the ***Endangered Spaces*** campaign.

We accept the recommendation to investigate creation of a new boreal wilderness. Part of this investigation will be to determine such an area's most appropriate designation. Depending on what its objectives are and what activities are deemed appropriate, a wilderness park similar to Willmore Wilderness Park may be more appropriate than designation under the Wilderness Areas, Ecological Reserves and Natural Areas Act.

We concur with the panel's recommendations regarding the importance of creative management as well as protective designation, particularly with regard to old-growth forest.

ISSUE
TIMBER MANAGEMENT

PANEL POSITION

In general terms, the panel supports the harvesting systems in use in Alberta. In particular, they consider that most Alberta forests are suited to some form of even-aged management, having originated as even-aged stands following fire. They recognize that clearcutting is often the most appropriate harvesting method.

However, the panel says there must be greater integration of non-timber uses, especially wildlife, more fully into operations. There should be greater flexibility in harvest methods employed, considering ecological requirements, reforestation needs, etc.

The panel considers that Alberta's long-term wood supply is secure; we are not going to run out of wood. Indeed, they criticize our methods for estimating regenerated stand performance and calculating annual allowable cuts as being too conservative. They believe we should be able to allow more harvest.

(Recommendation 36, 37, 39, 40, 41, 42, 43, 65, 67, 92; Section 1.0, 5.2, 5.3, 6.1, 6.2, 6.3, 6.6, 6.7, 7.6)

RESPONSE

We are pleased to see the support the panel gives for the harvesting systems in use in Alberta. We agree that the particular harvesting method used must reflect site conditions and the objectives to be achieved. We agree that there needs to be greater consideration of non-timber resources than there has been in the past. Significant

effort in this regard is currently under way. For example, the operating ground rules most recently negotiated with FMA holders have displayed greater consideration for wildlife. The increasing use of company/government committees composed of both forestry and wildlife specialists to assist companies in developing forest management plans is another example, as noted by the panel.

We are pleased that the panel has found that our forests are being successfully managed for sustained yield. While future research may support the panel's contention that regenerated yields may be higher than we are assuming, we believe that our conservative approach is the only prudent course, in the absence of conclusive data. Should their contention be correct, it will give us an extra degree of flexibility in future forest allocations for both timber and non-timber uses. Surpluses, once identified, can also provide balance for land base withdrawals which result in consideration of other resource priorities.

The panel's many technical recommendations regarding harvest are discussed in the detailed responses to each of the report's recommendations. Many are already being implemented.

ISSUE

REFORESTATION & SILVICULTURE

PANEL POSITION

The panel considers that in general, Alberta's reforestation system is effective. They support Alberta's policy of requiring industry to bear the responsibility for reforestation. They consider that our success has been generally satisfactory.

The panel recognizes problems with competition on some sites after successful seedling establishment. These were identified several years ago by Alberta Forest Service (AFS) studies. The panel commends Alberta's new reforestation standards, saying that they should ensure that forests, once established, are kept healthy and free growing until they are mature and ready for harvest again.

The panel considers that outstanding problems with the new standards remain on certain high elevation and wet sites.

The panel supports the limited use of herbicides under carefully controlled conditions as a legitimate tool in forest management. At the same time, the panel expresses reservations about any widespread use of herbicides to an extent that would limit food and habitat for wildlife. Prior to operational use, the panel recommends that more research and development, cost information, policy development and public information/education are needed.

The panel expresses concern over the potential adverse consequences of widespread peatland drainage for site improvement.

(Recommendation 44, 45, 91, 101, 102, 103, 104, 109, 110, 114, 115, 116, 120; Section 1.0, 8.1, 8.2, 8.5, 8.6)

RESPONSE

We are pleased with the panel's recognition and support for Alberta's reforestation system, and particularly with the new reforestation standards. We agree that data are lacking on wet and high elevation sites. Standards will be refined over time, in cooperation with industry, as more information is gathered. A joint AFS - industry committee to oversee this refinement process is already in place. In the mean time, lack of data is no excuse for not improving standards now, based upon the best ***current*** information.

We agree that herbicides ought to be available under certain tightly controlled circumstances. However, we recognize that this cannot happen on an operational basis without clearer public consensus on the acceptability of their use. The additional information identified by the panel will help somewhat in this regard. Over the coming months, we will be continuing the needed dialogue between the government and the public on herbicide use in forestry. Options for doing this are currently being examined. It would appear to be an excellent subject for the new departmental advisory committee to consider.

Peatland drainage in Alberta has only been conducted on an experimental basis. We share the panel's concerns about the potential adverse impacts of widespread drainage, and will continue to take a "go slow" approach. Continuing research is important, though, in order to find out what the ***actual*** impacts would be, rather than relying on speculation.

ISSUE

INVENTORY, INFORMATION & RESEARCH

PANEL POSITION

The panel considers that current resource inventories are inadequate, especially for fish and wildlife and their habitats. They say that inventory systems are needed that will provide essential information for resource planning and forest ecosystem management. The panel supports current efforts to develop and collect the Alberta Vegetation Inventory (AVI) for the Green Area of the province.

Throughout their report, the panel identifies numerous areas where more information and research are required. They consider that funding from the province has been inadequate and unstable.

The panel recommends that the Forest Research Branch of AFS should be expanded to serve the entire Department of Forestry, Lands and Wildlife. They suggest a tripling in size and a commensurate increase in associated resources.

The panel acknowledges the activities of the Alberta Forest Research Advisory Council (AFRAC) in setting research priorities. They appear to be concerned that the council, because of its strong membership from industry, will not pay sufficient attention to basic research.

(Recommendation 14, 15, 16, 17, 18, 19, 28, 44, 62, 63, 85, 86, 87, 88, 89, 103, 104, 105, 109, 110, 119, 124, 125, 127; Section 1.0, 5.1, 5.2, 5.3, 6.2, 6.5, 6.6, 7.3, 7.5, 7.6, 7.7, 8.3, 8.5, 9.2)

RESPONSE

We agree that inventories, especially those related to fish, wildlife and significant ecological resources, need to be improved. Much of this improved inventory is needed for detailed planning on the new FMAs. This does **not** mean, however, that inventories were inadequate to make the initial decision to allocate these areas to commercial forestry. Inventory can be collected at a variety of scales and levels of detail. What is good enough for broad planning decisions will often be inadequate for detailed, operational decision making. The panel clearly recognizes this where it recommends progressive inventory in advance of harvest.

The department has established a task force on information needs in conjunction with the departmental strategic plan. The task force is examining how to fill our most critical information gaps in a cost-effective and timely manner.

Considerable effort is being placed on improved inventory of the types discussed by the panel. The Alberta Vegetation Inventory has been accepted by FMA holders and by the department as the standard to use in the inventories that they are obliged to collect. These companies are to be commended for their cooperation in this regard, as it demonstrates their commitment to improved inventory and acceptance that their responsibility extends beyond timber inventory.

We recognize that increased research in many of the areas identified by the panel would be useful. There are two ways that we can accomplish more in research: by providing increased funds and by better targeting what we do spend. The current period of budgetary restraint makes increased provincial funding extremely difficult. There is some hope for money from a new federal - provincial agreement for forestry.

In terms of better targeting, however, we have made great strides. As noted by the panel, the Alberta Forest Research Advisory Council has undertaken to define research priorities. This has been a major undertaking with a very positive outcome. These priorities clearly recognize the importance of both applied research with fairly immediate application and of long-term, basic research. It is important to realize that the broad base of AFRAC means that these priorities apply not only to provincial research spending on forestry, but guide industry and federal priorities in the province, too. AFRAC provides a good forum for other research coordination efforts, as well.

ISSUE

STAFFING, FUNDING & DEPARTMENTAL ORGANIZATION

PANEL POSITION

The panel considers that the ability of Alberta Forestry, Lands and Wildlife to act as steward of the province's forest resources is seriously limited by staffing and funding, and that this ability is declining as management responsibilities increase. They recommend that more staff and related resources be provided, especially for professional and technical personnel. They highlight both Fish and Wildlife Division and Alberta Forest Service. They suggest an increase of 150 staff.

The panel considers that the organization of Alberta Forestry, Lands and Wildlife into distinct, resource-specific divisions constitutes an obstacle to cooperation and integrated management. They consider that the mandate of Forest Industry Development Division, as a promoter of development, is in conflict with the stewardship responsibilities of the rest of the department.

The panel recommends that the department be restructured to include most of the parks side of Alberta Recreation and Parks and to exclude Forest Industry Development Division.

They also recommend that field managers be responsible for a broad range of resources, including wildlife, fish, timber, parks, recreation and wilderness. This integrated management responsibility would extend to all levels.

(Recommendation 1, 2, 3, 4, 121, 122, 123; Section 1.0, 3.1, 9.1)

RESPONSE

We recognize the need for greater staff and associated resources as a result of the new forestry projects. The job of forest management is getting bigger, so it is not surprising that we need more resources to do it. The expanded contribution to the provincial economy means that, at least indirectly, these projects support this expanded management cost.

That being said, the Alberta government has deficit reduction as a top priority. Budget realities are going to mean that, over the short term, expansion of departmental resources is going to be extremely difficult. It is important to realize also that the demands that these projects will put on departmental resources are going to be phased in over several years.

Both in our departmental strategic planning and in the effort to manage within a constrained budget, we are looking hard at how the department can more efficiently and effectively achieve the high management standards that the public expects and demands.

Part of this strategic planning effort will be addressing whether structural change in the departmental organization would lead to better integration without compromising other important organizational characteristics. It would be premature to comment on the specific proposals by the panel for integrating the divisions more fully.

The panel recommendation that Forest Industry Development Division be moved to Alberta Economic Development and Trade appears to overlook the significant benefits that have resulted from its location in Forestry, Lands and Wildlife. Forest Industry Development has made a major contribution in attracting world-scale forestry projects to Alberta, plus substantial improvements in value added secondary wood processing. This would not have been possible without a very close relationship to the agency responsible for managing the timber resource — the Alberta Forest Service.

The location of Forest Industry Development in Forestry, Lands and Wildlife does not represent a conflict with the department's stewardship responsibilities. On the contrary, sustainable development involves the balancing of economic and environmental considerations. We consider that the incorporation of environmental values into development planning is considerably ***easier*** and ***more effective*** when the responsibilities for stewardship and development are housed in the same department. Note, as well, that the responsibilities of several of the other divisions (Alberta Forest Service, Public Lands, Fish and Wildlife) also have a commercial or development component.

The recommendation to incorporate provincial parks management into Forestry, Lands and Wildlife or its successor does not appear to recognize current organizational relations. For those programs where there is an obvious need for close interdepartmental coordination, such as ecological reserves, the coordination and cooperation between the two departments is, in fact, excellent. A department becomes unwieldy above a certain size, often requiring more than one Minister and deputy minister.

APPENDIX

FOREST MANAGEMENT IN ALBERTA

TECHNICAL COMMENTS ON THE EXPERT REVIEW PANEL'S RECOMMENDATIONS

APPENDIX

TECHNICAL COMMENTS ON RECOMMENDATIONS

1

More staff, particularly professional and technical positions in government and relevant support groups, should be provided, especially in those forests where rapid expansion of (FMAs) Forest Management Agreements is underway or anticipated, to a level that will allow the department to meet FMA-related stewardship obligations. Increasing the number of professional staff will be of little value unless accompanied by adequate funding to allow these specialists to perform their duties effectively.

Agree with the need for more staff and resources in response to the expansion of the forest industry and other increasing demands. At the same time, we must also accept the challenge to make more effective use of the resources we have. Current budgetary restraint, however, reduces the likelihood of significant resource enhancements over the short term.

Industry will be asked to take on more. Because FMAs require the holder to take on greater responsibility for forest management than is the case for other timber disposition holders, establishment of new FMAs shifts some of the burden of forest management effort from government to industry. The government will maintain its role in monitoring, inspections and enforcement in these areas.

2

The department should ensure staffing levels and budgets are adequate to provide a level of inventory, management planning and operational and reforestation control on Crown forest management units it administers that is at least equivalent to such practices on the best-managed FMA lands in the province.

Agree that we need to meet high standards for the management of all natural resources and that additional resources are desirable to accomplish this. Staff of the Department of Forestry, Lands and Wildlife carry out their management-related responsibilities in a very effective way within current budget allocations.

3

Based on these recommendations, the panel feels that a staff increase of at least 150 is appropriate. At least 15 should be professional and technical wildlife and fisheries personnel. Most of the remainder should go to the forests where new developments are occurring, with emphasis on areas that are currently understaffed, such as hydrology and environmental controls. These increases should be phased in over the next three years.

Agree that more staff and funding are needed in forestry, fish and wildlife areas. The size and distribution of any increases should be based on an analysis of current workload levels matched with priority requirements.

4

The level of coordination and integration of forest-wildlife activities should be improved so that the Alberta Forest Service, Alberta Fish and Wildlife, and FMA holders can achieve a cost-effective, efficient, and practical system of forest management.

Agree that coordination and cooperation on forest-wildlife activities needs to be improved. Improving coordination is a major issue in the department's strategic planning that is currently underway. At the same time, the substantial improvements in this regard over the last decade should also be recognized. Note that a cost-effective, efficient and practical system of forest management also requires the consideration of other resources and the means for stakeholders, including the public, to resolve their differences. To this end, the public is provided opportunities to input during preparation of integrated resource plans and detailed forest management plans.

5

Before any development that may affect federal jurisdictions occurs on provincial lands, there should be a process of more effective inter-government consultation, including public hearings where appropriate.

Agree. Current provincial government initiatives, including the Natural Resources Conservation Board Act, explicitly provide for consultation and joint review where appropriate. Cooperation with other jurisdictions is essential to avoid needless overlap and conflict. Inter-governmental review must be based upon a respect for the jurisdiction of each order of government.

6

In the future, public hearings on the environmental and social impact of forest development should not look at mill site and forest operations issues separately. Examining industrial impacts and management issues together will reduce public frustration and help control the high costs of such hearings.

Agree. The Natural Resources Conservation Board is expected to conduct such hearings on a project basis. We have always shared the panel's belief that a one-time Environmental Impact Assessment, on its own, would be inadequate to deal with the ongoing nature of forest management. For this reason, Alberta **also** has a comprehensive ongoing planning system covering all forest management activities. Public involvement is now an integral part of this planning.

7

As Canada and Alberta have already endorsed the principles of the World Conservation Strategy and the Brundtland Report, the panel recommends that the government immediately complete the Alberta conservation strategy especially for the forest sector.

Agree that an overall strategy for the conservation and sustainable use of resources is required. Our understanding is that this task will be completed as the "Alberta Sustainable Development Strategy" by the new Round Table on Environment and Economy. We continue to support this activity.

Agree that a policy or strategy specific to the management of Alberta's forests is also needed. Many of the policy issues under the responsibility of Forestry, Lands and Wildlife apply not only to the forest, but are province-wide. In order to address provincial issues in a provincial context, we will first develop a Natural Resources Policy Framework, covering all of the resources under the responsibility of Forestry, Lands and Wildlife. It will be followed by more specific sector policies, with development of a policy for forests – a Forest Conservation Strategy – on a priority basis. It will provide overall direction for forest management and administration, and will include (but will not be limited to) the subjects mentioned by the panel:

- forest administration;
- disposition policy;
- old-growth forest; and
- protected areas.

It will recognize all forest uses and their interactions.

8

The draft Alberta forest sector conservation strategy should be reviewed by forest and wildlife research scientists, the Alberta Registered Professional Foresters Association, and the Alberta Society of Professional Biologists before it is accepted.

Agree that professional review is important, but is not enough by itself. Full public review is required.

9

Once the Alberta forest sector conservation strategy is developed, a department policy consistent with this strategy is required. Division policies must be developed that effectively integrate and complement both the department policy and the conservation strategy.

Agree that a range of policies is required. We see this (going from general to specific):

- Alberta Conservation Strategy;
- Natural Resources Policy Framework;
- Forest Conservation Strategy and other sector policies;
- more detailed policies; and
- procedures, regulations etc., needed to implement policies.

This ordering is somewhat different than that proposed by the panel (for reasons outlined under Recommendation 7), but we believe that the panel's intent will be fully satisfied.

10

The Province of Alberta should clearly state the strategy used to administer the forests, to grant timber supply areas, and to manage all forest resource interests. This management strategy should combine the necessary elements of various acts, regulations, and policies (such as the Eastern Slopes policy) and define its objectives for forest development within the context of the proposed Alberta forest sector conservation strategy.

Agree that we need a clear and explicit policy on forest management and forest development. It will be developed as part of the Alberta Forest Conservation Strategy, with full public consultation.

11

The dynamic and flexible ground-rule system should be continued, and supported by an effort to raise public awareness of its value.

Agree. We are pleased that the panel recognizes that our ground rule system is an effective part of environmental protection. We also agree that greater effort is needed to acquaint the public with this system. This will occur in part through the public's involvement in forest management plans. It will also be part of a larger educational effort.

12

Two types of forest management advisory boards should be established immediately.

(a) An Alberta forest management advisory board similar to those already in place for the other two divisions of Alberta Forestry, Lands and Wildlife. This board would periodically assess and advise the government on its forest management strategy and matters such as forest policy, planning, management, ground rules, inventory, and staffing at the provincial level.

(b) Regional forest management advisory boards for each forest region that would address forest management concerns and work closely with the provincial advisory board. These boards would be made up of public representatives from various interest groups, plus professional, government, and industry personnel. Because many industries have an impact on forest ecosystems, there should be representation from all major industries active in the region.

Agree with the need for a provincial advisory body that covers forest management issues. Instead of setting up a body that would only address forest management issues, a new advisory committee to the Minister will be established to cover *all* the resource management policy issues of the department. This will allow for better coverage of the many integrated issues that involve several resources. The new committee will replace two existing advisory committees.

The recommendation to establish regional advisory boards is being pursued through the establishment of FMA-specific forestry environmental liaison committees. Several of these committees have already been set up and are providing input to forest management plans.

13

A forest management review panel should be established immediately to periodically (at 10-year intervals, for example) assess forest management in light of changes in forest technology and public values and attitudes. This panel should be established by the Environment Council of Alberta, in order to remain independent from the Department of Forestry, Lands and Wildlife and from industry.

Agree that periodic, outside and independent review can be valuable. The Environment Council of Alberta (ECA) hearings report on the environmental effects of forestry operations in Alberta, published in 1979, constituted such a review. We consider that the expert panel's own report is such a review, as well. The need for a further review a decade from now can be assessed by the provincial advisory committee at the time.

14

Priority should be given to enhancing current inventories for purposes of management planning, especially mixedwood and hardwood inventories, and inventories of the amount and distribution of spruce understories in deciduous and mixedwood stands.

Agree. Inventories should be enhanced to obtain more information on our deciduous resource, including mixedwood forests and coniferous understories.

Where the forest industry has management responsibility, an enhanced inventory should be conducted to provincial inventory specifications and carried out at the industry's cost.

Other resource users such as Fish and Wildlife (F&W) are and should continue to be involved in development of inventory specifications, e.g. the new Alberta Vegetation Inventory (AVI) which incorporates all other departmental users and was designed to facilitate the enhancements mentioned above plus additional enhancements identified by government and industry.

15

The Alberta Vegetation Inventory, incorporating information important for the management of both forestry and wildlife, should be extended as rapidly as possible into the Green Area, with priority given to FMAs where there is a commitment to an integrated wildlife/forestry management planning process. The inventory should be designed and guided by specialists representing all affected natural resource disciplines.

Agree. This is consistent with the direction in which we are now going with AVI. Where it is the FMA holder's responsibility to carry out inventory, it should conduct such using AVI specifications at industry cost. Companies have agreed to the common specifications developed by the department (AFS, F&W, Public Lands) and industry and are using them (e.g. Weldwood (Hinton), Daishowa) to conduct their resource inventories. Where it is the government's responsibility to conduct such inventories, the same specifications will be used.

16

Inventory enhancement techniques should meet management planning needs and information may be more or less detailed than that provided by the Alberta Vegetation Inventory. Enhancement should be done on a priority area basis and restricted to areas designated for operations within three to five years, to reduce costs and to help keep the information current.

Agree that inventory should match management needs in terms of area, subject, detail and timing. We agree that this implies that areas designated for operations within five years should have a particular priority.

17

The department's inventory and mapping process should be extended to include wildlife species-habitat relationships as quickly as possible.

Agree. This can be an extension of AVI mapping.

18

The Fish and Wildlife Division in co-operation with other government and non-government agencies should improve its inventory of fish and wildlife populations, including seasonal distributions and habitat requirements over timber, especially for priority non-game species for which there is scant information. This should first be done for land under forest management agreements.

Agree. The rate at which this can be accomplished will depend upon budgetary allocations. The need for this information for FMA planning will be an important consideration in determining priority areas. FMA holders themselves can greatly assist this process.

19

The government should implement the proposed Provincial Fish and Wildlife Resource Management Information Program.

Agree. More and better inventory of both populations and habitats on a province-wide basis is needed. AVI will satisfy this need in part.

20

Stand volume tables for various volume sampling regions should be reviewed and compared against one another. Significant differences should be resolved by field sampling and analysis.

Disagree. Volume sampling regions (VSRs) were designed to recognize regional differences in yield. To compare them would be inappropriate and would serve no purpose.

Comparisons between VSRs were made at the time of cover type volume table construction. However, this comparison was only to check reasonableness of values.

VSR information is periodically updated as the need becomes apparent, using actual cruise information collected in the field.

21

Actual volume/age data should be compared to the average yield curves for various volume sampling regions before these curves are used to develop annual allowable cuts. Where discrepancies exist the average yield curve should be recalibrated.

Agree. We interpret the intent of this recommendation is to localize VSR tables where necessary. We currently conduct a comparison between Forest Management Unit (FMU) and VSR data to see how reasonable the application of VSR data is to that of the FMU.

Within the growth and yield program, AFS is continually looking at ways of improving the relationship between forest inventory and yield projections.

22

The use of arbitrary yield tables for regenerated stands should be discontinued. A significant research effort should be directed toward establishing reliable estimates of regenerated stand growth performance and yield, and developing models that simulate performance and project future growth. These should be combined with accurate inventories of regenerated stands and incorporated into timber supply and annual allowable cut models. Until these yield tables are developed, forest management planners should continue to use natural stand yield tables, applied to existing stand conditions and distributions in the regenerated forest.

Agree that yield tables should be developed based on the actual performance of stands regenerated following harvesting. Full development of the necessary data base will require time for the stands to grow to rotation age. Growth and yield models are being developed to predict the eventual yield from regenerated stands. This work is under way, conducted jointly by AFS, Forestry Canada and industry.

In the meantime we will continue to rely on natural stand yield tables, enhanced by new data as it becomes available. Such tables are not "arbitrary".

23

The biogeoclimatic system offers particular utility for stand-level silvicultural decision making, but should be subjected to detailed field testing in west-central and southwest Alberta in coniferous, mixedwood, and hardwood stands. This is required to demonstrate its utility and limitations for application at the stand and cutblock levels before it is extended to other parts of the province.

Agree with the need for a bio-geoclimatic or other ecological classification system for the forested area of the province. We intend to put this system in place for the areas of the province for which classifications are available.

The need for a practical classification system is immediate, and cannot wait for long-term evaluations. Other jurisdictions (British Columbia, Western United States) have long-term experience with the concept, so we are confident that it will work here. Evaluation of the current system can proceed concurrently.

At the present an Industry/Government Task Force is evaluating ecological classification systems for Alberta. Task Force recommendations will be considered in classification and application development.

24

A staff training program should be initiated for the AFS field staff to adequately test the substantial existing biogeoclimatic data base for purposes of developing preharvest silviculture prescriptions. If the approach is feasible it would enhance the manager's capability to meet operational demands for more intensive forest management.

Agree. Once an ecological classification system is put in place, staff should be trained in its application.

In addition a formal process should be put in place to evaluate and improve the system and its application.

Educational institutes and departments should be encouraged to include ecological classification in their curriculum and training programs.

25

If the biogeoclimatic system proves useful the department should initiate research and development to adapt this system to the classification of recent cutovers and juvenile stands by supplementing the existing data base on successional trends.

Agree. Any ecosystem classification system developed should be able to encompass disturbed sites as well as mature stands, e.g. pre- and post-harvest.

26

The department should continue the GIS site classification pilot project using better-defined objectives and a data base that reflects ecological information currently available only in taxonomic keys.

Agree that continuing this work would be worthwhile. However, we consider that it has a lower priority than the development of on-site classification tools, such as the ecological classification work described above. We see the GIS pilot leading to a planning level tool, whereas site classification is also required at an operational level.

27

Early attention should be given to testing and scientifically forecasting the growth and yield of stands regenerated under current management practices.

Agree. AFS, Forestry Canada and industry are working to calibrate various growth and yield models and collect managed stand data.

The AFS is supporting the calibration of two growth models: Mixedwood Growth Model (MGM) for mixedwood stands and Stand Projection System (SPS) for pure species stands. The MGM model is presently being tested by Reforestation Branch. The (SPS) model is supported by Weldwood (Hinton) and Procter and Gamble.

The full development of a data base will require time for the stands to grow to rotation age as well as resources to establish and monitor plots.

28

Two research priorities should be addressed in natural stands (usually of fire origin):

(a) Developing the means to forecast trends in stand parameters used for defining the merchantability of stands that are currently unmerchantable; and

(b) Developing information on, and the ability to forecast stability, growth, and decline in, older cover type/age class combinations.

(a) Agree. Some information is available on fire origin stands, but it is not sufficient to forecast development of stands or their potential response to different kinds of treatment.

Industry, Forestry Canada and AFS will cooperatively collect information to supplement what is available and to develop predictive models.

(b) Agree that there is a need to evaluate/study older cover type/age classes to ensure our assumptions in Allowable Annual Cut (AAC) determination are correct.

29

Recent developments linking regenerated stand performance to silvicultural decision-assistance models appear to hold promise for Alberta. The province should continue and expand its efforts to develop similar capabilities in Alberta.

Agree. We are working to develop such models already but are constrained by lack of long term data.

Data collection and model development for regenerated stands will be continued and expanded.

30

All forest management areas should be assessed for priority land use needs, and stratified accordingly. Within each stratum, management of the priority resource should also embody sound management of secondary resources.

Agree. This is already done in many areas.

The Integrated Resource Plan (IRP) process already priorizes the use of forest land and it is our intent to have IRPs completed on all FMAs.

In addition, FMA areas may be further stratified into specific wildlife or other zones, when harvesting ground rules are established and through forestry/wildlife management planning committees, e.g. Procter and Gamble and Alberta Newsprint Company, where certain operating conditions were developed for specific wildlife zones (moose, caribou and trumpeter swan).

31

FMA holders should seek to develop innovative forest management techniques that will effectively address management needs within different priority zones.

Agree. FMA holders are currently directed to do this through development of ground rules for specific wildlife zones, and through forestry/wildlife management committees, e.g. caribou zones and moose zones have different operating conditions such as cut block size, retention period, line of sight, three pass system, etc.

32

Since optimum fibre production will not be achieved on non-forest priority zones, FMA holders should be encouraged to intensify their forest practices where appropriate, within priority production forest zones, in order to maintain their allowable cuts.

Agree that the shortfall in AAC that results from deletions from the forest land base or from other management that reduces AAC should be made up through intensive management on better forest sites. The provisions for compensation for withdrawals contained in recent FMAs support this practice.

33

In assigning landbase to all present and future forest management areas, wherever possible a reserve area equal to 10 per cent of the total forest management area should be established. This area can be used to replace landbase assigned to other priority land uses in the future (including old growth, see Section 6.5), and to address potential annual allowable cut shortfalls between the preliminary and detailed annual allowable cut determinations.

Disagree. Existing agreements have provisions built in that allow for withdrawal for other purposes, including anything from ecological reserves to coal mines. A separate area is unnecessary.

The withdrawal area specified in current agreements (1-3%) relates to compensation. It is not an absolute ceiling for withdrawal, should a larger area be required.

34

Fire losses should not be built into harvest scheduling models, but be accommodated within the periodic management plan revision process. In this revision, historic losses are analyzed and the resulting impacts are incorporated into the new timber supply analysis and annual allowable cut estimate. Inclusion of the fire risk allowance in current annual allowable cut development should be discontinued.

Disagree. The Department currently uses a fire loss allowance in our AAC determination. We build in allowances for natural forest mortalities such as fire, over the long term. If fire losses were not used, our AACs would be too tightly set, which could have a long term effect on the mill facility and on employment.

35

Proposed land use dedications that will reduce established annual allowable cuts in working forests should be analyzed for their economic and social impact, as well as their intrinsic merit.

Agree that social and economic implications must be considered. This is already a fundamental component of integrated resource management as it is currently practised. More formal benefit/cost methods may be useful in specific instances.

36

In specific cases where the operational two-pass clearcutting system is in conflict with other important forest land uses - aesthetics, fish, and wildlife habitat, erosion control or other uses - a team of planners/managers with relevant expertise should investigate, plan and execute a modification to the system, its extension to three or more passes, or a substitution of shelterwood or selection as a means of achieving management objectives.

Agree that the appropriate harvesting method should be chosen in consideration of all natural resources, integrated objectives and ecological factors. In particular, the harvesting method must consider the ecological requirements of the species to be regenerated (e.g. shade tolerance). Harvesting options should include three pass, multi pass, shelterwood and selection.

More emphasis is currently being placed on three pass harvesting with smaller cut blocks.

37

In cases where a system of three-or-more passes is initiated, the environmental impacts on soil erosion and water quality of the additional, early access over a compressed time period should be mitigated by special emphasis on application of ground rules and application of special procedures or structures to reduce erosion.

Agree that the effects of additional access associated with three or more passes must be weighed in deciding the appropriate harvesting method, and in mitigating its effects when chosen. However, ground rules and legislation to ensure environmental protection will be enforced in all areas, not just in special areas, as seems to be suggested.

38

The logistics and feasibility of large-scale harvesting operations in wetland areas of northern Alberta that have traditionally been conducted on frozen soil should be critically examined, with special attention to adopting harvesting technology that uses high flotation equipment to minimize potential long-term site damage.

Agree that we have to take extra care to minimize damage to wetlands when summer harvesting is permitted. This may require industry to use high flotation equipment more frequently although even this equipment cannot compare to harvest on frozen ground for minimizing environmental damage.

In areas where environmental damage can be caused through summer harvesting operations, the Alberta Forest Service will continue to provide conditional approval, e.g. winter harvesting on frozen ground only. Reforestation implications are also a consideration.

Large scale summer harvesting on merchantable wetland areas will not be approved until industry demonstrates summer logging techniques that do not damage the environment.

39

Harvesting systems should be appropriate to management priorities. Where forest management for timber production has priority, the two-pass clearcut system can be environmentally acceptable and appropriate. Where other forest land uses have priority the normal two-pass system may or may not be appropriate.

Agree. We will continue to consider all resource uses in all areas being planned for harvest. The type of management emphasis will determine the harvesting systems that will be considered. This approach is already in place.

40

In areas where timber production is designated as a prime use, the provisions for block size found in timber harvest planning and operating ground rules, and the trend toward smaller block sizes, appear reasonable to the panel. As changes in block size occur, all the implications of those changes, including cost, should be considered. Where other uses such as recreation or wildlife management have higher priority, block sizes should be modified or alternative harvest systems used if appropriate.

Agree that appropriate block sizes are a balance between cost and impacts on timber and non-timber resources, including recreation, wildlife and watershed.

41

Water quality monitoring should be incorporated into forest management planning and operations on second- and third- order watersheds to provide a data base for assessing environment impacts of forestry operations.

Agree that protection of higher-order watersheds is important. Protection of watercourses, including ephermal draws, is already provided for in the ground rules. Findings to date indicate that timber harvesting itself is not a contributing factor to water quality problems. However, roads, landings, bared areas and water course crossings are recognized as potential environmental risks when improperly constructed or maintained.

42

The potential impact of scarification on soil erosion and water quality, particularly severe scarification to achieve vegetation control, should be assessed with special regard for impacts of scarification on ephemeral streambeds. (This monitoring and research would be made possible by the staff increases called for in Recommendations 1 to 3.)

Agree that these potential impacts should always be considered in assessing whether scarification is appropriate, and if so, how the treatment should be carried out.

AFS continues to monitor the effects of erosion from scarification. Severe scarification that causes erosion is not being carried out. Operations are not permitted where there is a defined stream bed.

43

Water should be managed on cutblocks to produce or maintain moisture conditions to aid the establishment and growth of new forest crops and for other environmental benefits. This will require pre-harvest planning as well as site preparation planning for on-site water management. The panel believes that in many cases herbicide use will cause much less damage than severe scarification.

Agree that pre-harvest planning to guide reforestation is important. This planning takes place now and will be strengthened. Surface hydrology is considered when determining site treatments. Pre-disturbance watershed assessment is a process used prior to harvest to forecast watershed impacts. Harvest and reforestation planning incorporate pre-disturbance watershed assessment on identified areas. Herbicides have a place in some situations for site preparation, by reducing competition. They will not, however, by themselves, create a warmer, dryer seedbed necessary for seedling growth in cold, wet soils.

44

The panel has serious concerns about widespread drainage done to convert peatlands to commercial forest. Before any conversion is done, additional research should be done on chemical and physical water quality, carbon storage, streamflow, peat subsidence, moisture content of unsaturated zones (above water table) in drained sites and the impact on wildlife habitat for ungulates, birds and furbearers. The research should detail all ecological, environmental, social and economic values of peatlands in their present and converted state.

Agree that drainage programs should not become operational until ecological, environmental, watershed, and economic concerns are addressed. Note that the only forest drainage programs to date in Alberta are experimental and have been completed on eight small areas in Northern Alberta (1100 ha total). No further drainage work has been done since 1989. Research on these areas will eventually detail the significant ecological, environmental and economic values and the impact of drainage on them.

45

Possible conflicts between peatland drainage and a strategy to mitigate effects of climatic change in Alberta should be assessed (see section 8.7). Peatlands are a sink for both water and carbon, and probable climate change in the boreal forests of Alberta means that such areas should be maintained to mitigate potential warming and drying trends in the next few decades.

Agree that the impact of forest drainage on the carbon balance and climate change is one of the factors that must be addressed before large-scale operational drainage is considered.

46

In new development areas with large areas of wetland, the adequacy of ground rules for watersheds, road development, and stream crossings should be fully assessed, particularly with respect to maintaining channel stability in ditches, sediment control, and drainage characteristics of peatlands in particular (damming effects).

Agree that ground rules must adequately address concerns of particular importance to these areas. Specific consideration already occurs, as ground rules are negotiated for each new FMA based on the biogeographic values of the specific area and are subsequently evaluated and revised at least every five years. General development plans and annual operating plans and approvals also consider these factors.

47

Commercial forests on mineral wetlands can be difficult to regenerate to new stocking and growth standards. However, drainage to aid reforestation may be a threat to water quality and wildlife habitat. Such areas should not be harvested until they can be successfully reforested and the impacts satisfactorily explored and the consequences accepted.

Agree that refinement of harvesting and reforestation techniques on wetlands is required. Wet mineral soils are difficult to reforest and require close coordination between harvesting and reforestation programs. New reforestation treatments and harvesting systems will be developed and refined cooperatively by both government and industry to deal with these areas. Agree that areas for which reforestation cannot confidently be assured ought not to be harvested.

48

Ground rules that relate to soil erosion should be reviewed to ensure they adequately address operating conditions in the new development areas of north and northeastern Alberta.

Agree that ground rules must adequately address concerns of particular importance to these areas. Specific consideration already occurs, as ground rules are negotiated for each new FMA, based on the biogeographic values of the specific area, and are subsequently evaluated and revised at least every five years.

49

Logging methods and new technology should be matched to site conditions to reduce the impact of logging on site productivity. This is of particular concern as operations move into mixedwood sites that are moist to wet and/or interspersed with wet areas, and where current technology appears to retard stocking and growth of regeneration. Techniques that reduce the number of skid trails, landings, and rutting within cutblocks would be particularly effective in reducing impact.

Agree. Industry must match logging methods and equipment to site-specific areas to ensure ground rule standards are met. Control is exercised through Annual Operating Plans, followed up by field inspections.

50

The selection process for new reserves and Natural Areas should be formalized immediately to ensure that significant ecosystems are represented in appropriate categories. The present selection process is inadequate and rapid development could result in the loss or compromise of important candidate sites.

Agree that there needs to be a formal process for selecting both ecological reserves and natural areas, including linkages to the integrated resource planning program.

Currently there is a formal process for ecological reserves but not for natural areas.

51

The possibility and location of a boreal wilderness area should be investigated. All the provincial wilderness areas are located in foothill or mountain terrain. The panel believes that a boreal wilderness area of a size similar to the present wilderness areas would be a useful addition to the system.

Agree that the possibility of a boreal wilderness areas should be investigated. Such investigation would include evaluation of biophysical, social and economic impacts and integration with other resource uses. It would also require linkages to the integrated resource planning program, particularly the regional plans currently being developed.

Whether to designate the area as a Wilderness Area, or whether other designations are more appropriate, such as wilderness park (similar to Willmore Wilderness Park), would also have to be decided.

52

A common reference map such as "Ecoregions of Alberta" (Strong and Leggat 1981) should be used for the various wilderness, ecological reserves, natural and protected areas in Alberta and should be linked to a national reference like "Ecoclimatic Regions of Canada" (Canada Committee on Ecological Land Classification 1989).

Agree with the desirability of a common reference map. We are working toward this goal. As one part of this process, the department is currently updating the 1981 Ecoregions of Alberta report with input from Recreation and Parks. It will be assessed in the context of the national report cited.

53

Support should be given to the selection, protection, management, and status review of representative forest ecosystems throughout Alberta, with input from the Rocky Mountain Section of The Canadian Institute of Forestry, for purposes of scientific study, education, gene pool preservation, and benchmarks for research into management practices. Some forest ecosystems may currently be represented in existing ecological reserves, Natural Areas, or other areas.

Agree with the need to protect representative ecosystems throughout Alberta. This is one of the purposes of the Ecological Reserves and the Natural and Protected Areas programs.

Not only CIF should provide input - this should be available to any interested individual or group.

54

A registry of these proposed sites should be prepared (Buckman and Quintus 1972).

Agree with the need for a registry. The department is currently exploring ways to develop it.

55

Northern and northeastern Alberta should be a priority in selection of representative ecosystems or unique features, in view of the proposed development. The list of International Biological Program sites proposed previously should be assessed for relevance to this area.

Agree that the expected pace of development in different parts of the province is an important factor in setting priorities for selecting representative ecosystems and unique features. It is also important that such areas are selected within the context of provincial policy and strategy.

56

The size and shape of reserves should reflect ecosystem integrity rather than rigid survey lines.

Agree that the size and shape of reserves must reflect ecosystem integrity. However, ecosystem boundaries are difficult to record or describe in terms of survey. There is nothing wrong with using the legal survey grid as long as the ecosystem is buffered within the grid.

57

Ecosystem components that are essential to meet specific consumptive and non-consumptive old-growth criteria should be defined, identifying those that clearly require a preservation approach, and those that are best addressed by conservation and creative management rather than preservation.

Agree that these ecosystem components need to be defined. This can best be accomplished within the policy discussed under Recommendation 58, below.

58

A policy should be developed for the designation and management of old-growth forest ecosystems under the Alberta Conservation Strategy with input from government, non-government organizations and professional forestry/wildlife/environmental societies. Such a policy should address conservation and preservation strategies essential for satisfying consumptive and non-consumptive interests.

Agree to develop a policy on old-growth as part of the Forest Conservation Strategy. The policy will address the issues mentioned by the panel. The policy will require public input and review as part of the Forest Conservation Strategy, including involving the interests listed by the panel.

59

Opportunities to meet old-growth criteria for specific uses through creative planning and management rather than exclusive reservation should be explored. This is exemplified by current efforts to combine timber harvesting with provision of caribou habitat and snags for cavity-dwelling wildlife and can lead to a more effective use of a limited forest land base.

Agree. To a certain extent some of our forest management activity is being conducted to meet this goal, e.g. caribou management in several FMAs and environmental protection reserves.

As ground rules and management plans are updated, these creative management planning techniques will be incorporated to formally account for old-growth conservation.

60

Wilderness areas, ecological reserves, natural and protected areas, and parks, as well as areas netted out as buffers and other reserves during management planning, should be assessed to determine their status and suitability as candidate old-growth forest ecosystems.

Agree. Many areas which have been deleted from the forest industry land base contain a variety of mature and overmature timber stands and their contribution towards old-growth objectives should not be discounted.

61

A selection and screening process should be developed to add important old-growth forest ecosystems not already represented in existing reserves.

Agree. The selection and screening process can be developed once the policy under Recommendation 58 is completed.

62

The level of research activity into the structure, function, and composition of old-growth forest ecosystems should be increased, especially with respect to rare, endangered or threatened flora and fauna.

Agree. The priority must be researched to answer specific management needs, or to answer ecological questions providing baseline information on these systems.

63

Studies that accurately monitor the effects of various harvesting and regeneration systems on fish habitat are essential and should be implemented and supported by the department and forest industry for a period long enough to measure the impact, beginning before initial logging and extending until the alternate cutblocks in the surrounding areas have at least reached the immature stand stage.

Disagree that research is a priority in this area. The effects of various harvesting and regeneration systems on fish habitat are well known. Tri Creeks watershed study showed minimal impact from harvesting. The priority is on the setting and enforcement of harvesting conditions that protect fish and fish habitat.

64

Regional fisheries biologists in forested regions of Alberta should be allocated the funds and time necessary to prepare both regional and FMA fisheries management plans, in co-operation with Alberta Forest Service and the forest industry.

Agree. Plans will be developed and integrated with other resource uses. Fisheries considerations are currently integrated in existing plans (annual operating plans, etc.) through routine referrals.

65

Greater efforts should be made by the industry, at the field level, to minimize soil and vegetation degradation and overland water movement. Not enough is done during harvesting and reforestation to reduce the energy of water flow on logged areas.

Agree that minimizing soil degradation and erosion is important. These factors are considered both in ground rules and in the review of annual operating plans. As long as these plans and rules are followed, erosion on cutblocks is not a significant problem.

Ensuring compliance requires frequent inspection and vigorous enforcement by AFS staff.

66

There should be a formal water quality management policy for forested lands that gives AFS some management responsibility in addition to that of Alberta Environment. This should be written into the forest sector conservation strategy.

Agree that water quality is an appropriate component of an overall forest policy/conservation strategy. AFS management responsibility is for watershed management necessary to achieve water quality standards set forth by Alberta Environment. This responsibility could be formalized in the Alberta Forest Conservation Strategy.

67

Government and FMA holders should use greater flexibility in determining which harvesting and regeneration system is best, after considering forest type, location, and land use priorities. Recognizing the need for land use zoning on the basis of management priorities, the system used should ensure that all land use interests are effectively integrated into forest management planning. This will require enlarging the body of expertise on forest planning and negotiating committees.

Agree that flexibility is required in determining the most appropriate harvesting and regeneration systems. Zoning in regional and sub-regional plans, and in some forest management plans, provides some guidance. However, zoning cannot reflect all resource use or site conditions. The need to involve a broader range of expertise in developing forest management plans is recognized and accepted. Site-specific factors must also be considered and integrated at more detailed operational planning and in the field. The flexibility to consider all of these things already exists in the current system, and is used.

68

Within the multiple use category of Integrated Resource Planning areas, some areas should be identified as having a priority use for timber growth and harvesting by reclassifying them as forest production.

Disagree. A "forest production" zone is not required. All of the commercial forest land base in Alberta is managed on a multiple-use basis, and the concept of such a zone appears to imply single use management. Within more detailed planning, identifying areas for intensive timber management *may* be appropriate, but these areas cannot be accurately or meaningfully mapped within existing sub-regional integrated resource plans.

69

Forested lands without management plans should have integrated plans developed by an interdisciplinary team of resource specialists.

Agree. Integrated resource plans will eventually be prepared for all public lands, at both a regional and a sub-regional scale. A high priority has been given to completing plans in areas proposed for development and where FMAs have been recently established. Forest management plans are required for all FMAs, and these are also being developed by interdisciplinary teams in industry, with the full participation of the public.

70

In recognition of the real costs and benefits of achieving integrated resource management objectives, funding of these initiatives should be rationalized and shared between the province and the FMA holders.

Disagree. FMA holders are required to practice integrated resource management as part of their agreements, and to operate within the framework of integrated resource plans, where they exist and as they are completed.

71

Provincial government and forest industry should be encouraged to continue refining and extending ground rules to meet the specific needs of each quota area or FMA. These rules should be effectively communicated to supervisors and workers, with ongoing training and supervision to ensure that the intent of the ground rules is achieved and is seen to be achieved.

Agree. This recommendation is an AFS operating policy, and has been since 1956 for FMA holders and 1975 for Quota holders. Fine tuning of ground rules normally takes place on a 5-year cycle, and is a continuous process. The most recently negotiated FMA ground rules have represented a substantial refinement and improvement over all previous ground rules. Changes include smaller cutblocks, greater growth requirements on harvested blocks before subsequent-pass harvest, provisions for specific featured wildlife species and recognition of old-growth and snag protection. The AFS has developed and is expanding training programs for government and industry personnel at worker, supervisor and professional levels. Eventually, training programs will be developed for significant silviculture treatments and harvesting practices.

72

For operations where there are a variety of resource interests and objectives, the principal contributors to the integrated plan should be represented both in the development of training manuals and in the instruction of operating staff, and, in especially sensitive areas, be involved in operational monitoring and control.

Agree that those involved in the integration of the forest management plan should be involved in the development of training manuals. Each contributor should be responsible for training their operational staff. Enforcement should be carried out by the mandated agency once the ground rules have been developed. Under special circumstances, other agencies may appropriately be involved in monitoring impacts on resources for which they have management responsibility.

73

The public should be better informed about ground rules, to understand the roles of both the department and industry in resource stewardship and also to encourage informed public involvement in monitoring ground rule compliance.

Agree. Increasing public awareness of the ground rules would be of tremendous benefit both to the department and to industry. The recommendation can also apply to other elements of our management system, including forest management plans, annual operating plans and our approach to enforcement. Industry and government should take every opportunity to help promote awareness of resource management and encourage an open door policy to the public.

74

Alberta Forest Service and Alberta Fish and Wildlife should co-operate further as partners with industry in the development and implementation of forest management plans and operating ground rules. Such an approach is evolving on the Weldwood and Procter and Gamble FMAs.

Agree that all parties must work cooperatively toward mutual goals. This partnership must recognize the different roles and responsibilities of the involved parties. In particular, the Crown is steward of the land and resources for the public, while industry is responsible for forest management plan development and implementation and public involvement. Industry processes are subject to government approval. Rights and responsibilities are spelled out in FMAs.

75

The effects on fish and wildlife species of road access and various vehicular activities should be assessed. As an interim measure in new development areas, restrictive bag limits for fish and wildlife harvest should be adopted and wildlife sanctuary corridors along all roads and seasonal road closures seem appropriate.

Agree that the increased access provided by forestry and other industrial development can be a significant factor in fish and wildlife impacts and management of access can be an important

component in the mitigation of these impacts. Road corridor sanctuaries and seasonal closures are certainly some of the tools available. Several road corridor sanctuaries were established in 1990, and their effect is currently being assessed. Appropriate access controls should be applied where there is an identified management need, whether or not in new development areas. They should not be imposed in a blanket fashion.

76

An access management plan should be incorporated into each detailed forest management plan under the guidelines of a department policy. This access management plan should fairly represent the interests of all natural resources and resource users, while protecting wildlife and fish from overharvest and harassment, and minimizing environmental degradation.

Agree that access management planning is an important component of integrated resource management. The need for an access management plan may be identified during the development of an integrated resource plan or a forest management plan. This plan must be the responsibility of the department, not the FMA holder. Many of the tools available for managing access (e.g. access regulations, hunting regulations) are only available to government. The forest industry cannot and should not be responsible for overall access management plans that deal with other users. Forest management plans should contain road and access considerations as they pertain to forestry development.

77

Recreation and tourism is an important land use and has to be part of the ongoing integrated management process.

Agree. These are important considerations now.

78

Allocations for significant recreation opportunities (parks, wilderness areas, heritage rivers, potential trophy fishing waters, etc.) should be made before forest management agreements are signed.

Agree that this is preferable. The existing IRP process is designed to accomplish this objective, but due to the size of the province, all areas have not yet been completed.

Significant existing and potential recreational opportunities identified are withdrawn prior to FMA negotiations taking place, e.g. proposed Lakeland Park and Recreation Area was excluded from Alberta-Pacific's proposed FMA area. All FMAs have provisions for withdrawal of lands by the Minister after they have been signed. This allows for recreation and preservation opportunities to be maintained whether or not they are identified prior to signing agreements. Withdrawals may also be made to allow resource development, such as coal mines and oil sands.

79

The FMA allocations and other forest management decisions should be made in the context of the integrated resource planning system to which the government is committed. Within this context, tourism concerns should be well represented.

Agree that it is preferable to make FMA allocations in the context of integrated resource plans. However, because of the size of the province and the length of time to complete these plans, this has not always been possible. Efforts will be made to ensure that this is the case in future. As integrated resource plans are completed on existing FMAs, management planning will be adjusted, as necessary.

Tourism is already an important component of integrated resource planning.

80

Opportunities to provide recreational experiences and facilities within managed forests should be explored and expanded. Those industries that benefit from the resulting revenue and goodwill should contribute to the cost of providing and maintaining facilities.

Agree that more emphasis should be placed on providing recreational experiences and facilities in managed forests. FMA holders are encouraged to expand recreational opportunities. This provides public relations benefits to them.

81

The government and the forest industry should endeavor to accommodate the trappers' concerns within the integrated resource management plan.

Agree. Trappers and the Alberta Trappers' Association have opportunities to present their concerns within the existing public involvement program for integrated resource plans. In addition, individual trappers must be consulted by the forest industry as part of each company's more detailed planning.

82

The 1986 draft position paper on fur management policy should be updated in co-operation with AFS and reviewed by the Alberta Trappers' Association and the Alberta Forest Products Association. It should then be finalized and implemented as soon as possible.

Agree that a clear policy on fur management is required, and the department is committed to developing one.

83

The Alberta Trappers' Association should work closely with the forest industry and Alberta Forestry, Lands and Wildlife regional planners to identify important sites (including cabins, trails, and major furbearer habitats) within each registered trapline and where necessary, to negotiate for modifications to the forest management plans.

Agree that consultation with trappers must be part of forest management plans. This is already required. Consultation is normally with the individual trapper, who is in the best position to identify site-specific concerns.

84

If registered trappers are to be eligible for mitigation from the forest industry, they should be required to provide annual fur return data and revenue for a stipulated period, (5 to 10 years, for example), to demonstrate they are legitimate trappers and to provide information on which a mitigation claim can be based.

Agree that any compensation provided should only be available for actual documented losses. The present policy does not provide for compensation for habitat modification. Questions of whether trappers should be compensated as a result of habitat modification caused by logging, and whether forestry companies ought to contribute to the compensation fund are best left to the policy development identified under Recommendation 82, above.

85

Fish and Wildlife should be an integral partner with the Alberta Forest Service in forest inventories, planning and management.

Agree. Fish and Wildlife is now more directly involved in developing inventory specifications and priorities; negotiating and revising planning and harvesting operating ground rules; and developing and reviewing forest management plans and annual operating plans.

Nevertheless, we recognize that even more effort must be made towards integration. How this can best be done is an important subject for the department's current strategic planning process.

86

Baseline inventory information on fish and wildlife resources and their habitats should be improved to a level satisfactory for developing sound forest-wildlife management plans.

Agree. Lack of fish and wildlife inventory is an impediment to effective integration.

The Alberta Vegetation Inventory (AVI) was developed specifically to meet Fish and Wildlife inventory needs from a habitat standpoint. When completed, it will be a major step towards reducing this impediment. This inventory will eventually be completed over the entire province, and the department is committed to fast tracking it in those areas where there is the greatest need.

87

Fish and Wildlife should develop a comprehensive and realistic strategy for meeting its resource management information needs in forest regions over the next 10 to 20 years. This strategy should complement and mesh with a forest sector conservation strategy as well as government and non-government programs.

Agree. Much of the groundwork for such a strategy has already been done. It will be completed within the context of the Natural Resources Policy Framework discussed in Recommendations 7 and 9.

88

The 1989 draft strategic plan for management of Alberta's wildlife is basically a sound and vital document that should be quickly reviewed, finalized, receive ministerial approval and be implemented. Following approval, the role of the Fish and Wildlife Division should be strengthened in inventory, monitoring and management of existing endangered, threatened or rare wildlife species in addition to those already listed as scarce that are expected to be affected by industrial activities on forest lands.

Agree that the Fish and Wildlife strategic plan needs to be completed and implemented. It will be finalized in the context of the departmental strategic plan, which is underway, and the Natural Resources Policy Framework, which will be developed.

89

The Alberta Bird Atlas project should receive greater support. Federal government (Canadian Wildlife Service) involvement should be increased because of the national implications and a joint co-operative project of inventory, monitoring, planning management, and research of endangered, threatened, or rare wildlife species in the forested regions should be established. Funding of this study should be shared among various government (federal, provincial, international) and conservation organizations.

Agree that the Alberta Bird Atlas is a worthy project, which is being supported by the department through provisions of funding and logistical support.

90

An effective management program should be implemented within each FMA to ensure the survival of endangered, threatened or rare species, and expedite their removal from these precarious categories.

Agree that an effective *provincial* program is required, as survival of endangered, threatened or rare species is a provincial priority, not just the FMAs. Where these species are identified within FMAs, they will be a significant consideration within forest management plans and other planning instruments. At the present time, where these species have been identified, provincial Fish and Wildlife and forestry staff are working in cooperation with the FMA holder to formulate and implement management strategies. The most notable current example is of caribou on the Weldwood (Hinton) and Procter and Gamble FMAs.

The oil and gas industry is also working to better define requirements for industrial activity to coexist with caribou.

91

The responsibility for normal reforestation and stand maintenance should continue to rest with the operator holding the harvesting rights, who should pay the cost of such operations.

Agree. This recommendation supports current government policy.

92

Each forest company should have greater freedom to choose the harvesting and regeneration system that is best suited to agreed-on management objectives and site conditions, within regulatory constraints.

Disagree. The forest company should have (and does have) great freedom to *propose* harvesting and regeneration methods to meet agreed-upon objectives. However, the Crown must retain final authority to approve the methods to be used, because as steward of the resource, it retains a stake in the results. This is for two reasons. There is the potential for impacts on non-timber resources over which the Crown has direct responsibility. The long time periods between reforestation treatment and check-off means that timber resource loss to the Crown is also a consequence of failure.

93

Research should be conducted into effective ways to rehabilitate and reforest previously degraded mixedwood stands.

Disagree. More research is not required. We recognize that effort is needed in this area, but we have a reasonably good knowledge base upon which to proceed. The Crown and industry will develop

a joint inventory to assess the extent of hardwood conversion and where stand tending, revised harvesting or AAC adjustments are required.

These areas are generally categorized as supplemental reforestation opportunities in FMAs. The mechanisms are in place to reforest the sites.

94

During current and future hardwood/mixedwood harvesting, the utilization of balsam poplar and white birch should be improved to reduce waste and increase the stocking and vigour of the new hardwood crop.

Agree. This Recommendation supports provincial policy to promote use of balsam poplar and white birch.

New FMA developments require the use of balsam poplar. Existing developments continue to look at feasible ways of utilizing balsam poplar. Some trials are being conducted with Alberta Research Council to investigate utilization opportunities. White birch, although much less common, will be utilized more and more on a local basis, and the department will make opportunities for its use available. The most recent FMAs have recognized the growing importance of white birch by excluding the species from the exclusive control of the FMA holder.

95

New techniques and standards should be developed for reforestation and growth of mixedwood stands. Special emphasis on enhancing natural regeneration of white spruce should be considered.

Agree. The new reforestation standards detail the mixedwood reforestation standard. New timber management regulations require the protection of natural regeneration and advance growth when harvesting mixedwood stands. Studies are underway with the Forest Engineering Research Institute of Canada (FERIC) and the forest industry to study mixedwood harvest techniques.

96

Pre-harvest silviculture prescriptions that integrate silvicultural and harvesting systems in support of management objectives should be required on all FMA and quota lands, followed by post-harvest assessments and tending plans.

Agree. With the implementation of the new reforestation standards, preharvest silvicultural prescriptions will become common practice. The new record system currently being developed provides for proposed silvicultural prescriptions.

97

New nursery capacity should be designed for maximum flexibility to respond to changes in demand and prepare contingency plans for handling, storage, sale or write-off of excess stock.

Agree that flexibility is an important consideration in evaluating options for increased seedling supply. This is true whether the expanded supply is through the construction of new provincial nursery capacity or through expanded private sector contracting.

98

The province should encourage the development of private production-scale seedling capacity by experienced and professional tree growers.

Agree. Private sector opportunities are already being expanded both by increasing contracts to experienced growers and through a "starter" program to increase the experience of other nurseries.

99

The province should develop a fine-tuned communication and scheduling system between seedling users and producers that includes a forecast of all controllable factors in the system, (including available planting sites over time) and priority ratings for different stock types in case of production limitations or other contingencies. This could include allocation models with economic criteria built in, and may justify some systems design research and development before initiation.

Agree. Communication with seedling users and producers has been established through the Alberta Forest Products Association (AFPA) Technical Subcommittee. The Commercial Tree Nursery Section at Pine Ridge Forest Nursery was developed to deal with seedling contractors. The general silviculture plans require forecasting of five year seed needs and seedling requirements which are geared to harvesting levels and site preparation scheduling.

100

In principle, stock quality should take priority over quantity in all nursery operations.

Agree. In part, this is reflected in the trend to grow fewer, larger seedlings. Container seedling capacity at Pine Ridge Forest Nursery has been reduced from approximately 22.6 million seedlings grown in 40 cc containers to 13.5 million seedlings grown in 65 cc containers.

101

The Alberta Forest Service and the forest industry should be encouraged to continue developing reforestation standards that include stocking and growth criteria and to link reforestation, juvenile growth, and stand yield.

Agree. The new reforestation standards incorporate stocking and growth performance. The new standards will be monitored, evaluated and revised over time to incorporate differences in sites throughout forested regions in Alberta.

102

The value of herbicides as tools to maintain both conifer and mixedwood cover types where they are most desirable should be given special consideration.

Agree that herbicides may be the most cost-effective means to meet some reforestation goals. However, herbicides are not the cure-all for vegetation management, only one of the tools. Operational trials are essential to refine our knowledge about the use of these chemicals, including effects on both target and non-target species.

103

Research and development into both stocking and growth is needed to increase the effectiveness of conifer reforestation on wet areas and those that become waterlogged following harvesting.

Agree. Under the new reforestation standards, information will be collected as part of stocking surveys on these sites (as well as high elevation sites) specifically to provide base data.

104

Growth performance requirements for free-to-grow standards should be supported by appropriate research. It is expected that these standards will vary considerably by species, elevation, aspect, and other factors.

Agree that standards should be supported by appropriate research and that such research is needed. The new regeneration standards are seen as the first approximation of standards that incorporate growth and performance criteria. They include specific criteria for wet sites and high elevation sites, and we recognize that these criteria are not fully supported by field data. However, lack of complete information is no excuse for inaction on a real and present management problem. We must act now on the basis of best current information, and refine the standards as new information becomes available. To delay implementation would allow a reforestation backlog to build.

We have established a government/industry silvicultural monitoring committee to oversee refinement of the standards, based on extensive monitoring over the next five years.

105 Research and development is needed to provide information on the regeneration and growth characteristics of balsam poplar and white birch relative to aspen on hardwood and mixedwood sites. Such information should be incorporated into new hardwood reforestation standards, addressing both stocking and growth.

Agree that there is a need for growth and yield information for balsam poplar and white birch. However, this information is a lower priority compared to other current research needs on higher-value species. Balsam poplar and white birch have demonstrated aggressive growth characteristics and are not a problem at this time.

106 Nursery programs in Alberta should include plans for hardwood production of both pure native species and hybrids for use in reforestation (as does the Weyerhaeuser program at Prince Albert, Saskatchewan). Aspen clones and hybrids should be given major emphasis.

Agree that we need to support hardwood tree improvement, and have a program in place. Alberta is placing the responsibility for deciduous nursery programs with industry. To date there has been little need for these programs.

Any large-scale move to hybrid deciduous plantations would have to be undertaken with care, as it would involve altering the native plant communities.

107 A survey of recent hardwood cutovers in Alberta should be conducted to determine the impact of current logging technology on stocking and growth of the new hardwood forest and to consider alternative logging technology to reduce negative impacts.

Agree. We recognize the concern that compaction and excessive soil disturbance may adversely affect reforestation success of deciduous species. Cooperative trails are being run with the Forest Engineering Research Institute of Canada (FERIC) to study reforestation implications of compacted soils and rehabilitation to increase reforestation success. An integral part will be to inventory previously reforested blocks and develop a strategy to deal with non-stocked areas.

108 A strategy should be developed for rehabilitating and reforesting previously degraded hardwood and mixedwood stands in Alberta.

Agree that these sites need to be rehabilitated. This process is in place for existing FMA areas already. Supplemental reforestation of overmature hardwood forests will be operationally assessed in management plans. This strategy will include salvage of merchantable timber.

109

Research and development should be undertaken into ways to enhance natural regeneration capability of white spruce on mixedwood sites through modified harvesting, fire, or other means.

Agree. The department has research and monitoring programs to encourage white spruce regeneration. Natural regeneration is only one component. Anything that will enhance the establishment of coniferous natural regeneration will be of use in mixedwood stands. Maintaining the coniferous component at current AAC levels requires intensive management (stand tending).

110

Research into juvenile stand development is needed to provide data on the reforestation and development of mixed stands of conifers and hardwoods to develop effective mixedwood reforestation standards for Alberta. Such data are essential to establishing free-to-grow standards as part of the reforestation standard.

Agree that this research is needed to refine reforestation standards. AFS is involved in mixedwood stand modelling. AFS and industry will continue to study juvenile stand development. Additional data need to be gathered to increase the accuracy of the data pool and subsequent growth projections.

111

New standards for reforestation and development of mixedwoods should be incorporated into pre-harvest silviculture prescriptions, reviewing harvesting equipment appropriate to achieving silvicultural objectives. Shortwood systems should be given special consideration.

Agree. Pre-harvest silviculture assessment systems are being evaluated. As we move to more intensive silviculture management, equipment and harvest techniques will be required to meet new standards. Industry will have to develop the technology to meet these objectives.

112

Application of new conifer reforestation standards and free-to-grow criteria to mixedwood sites where hardwood, birch, and grass competition are severe, should include cost effectiveness assessments to determine the practicability of such activity.

Disagree with allowing cost effectiveness to determine silvicultural prescriptions. If industry is going to harvest, the growing stock must be replaced.

113 A clear objective statement of forest renewal and management needs in Alberta should be developed, with the costs and effectiveness of alternative methods of vegetation management as a component of the statement.

Agree that clear objectives are important. Objectives are currently implicit in our sustained yield and integrated resource management policies and in our reforestation standards. Also agree that the costs of using different methods and tools to achieve these objectives would be useful in weighing the benefits of each against the risks.

114 A policy and regulations on the critical issue of vegetation management and supportive research and development should be developed.

Agree that developing a clear policy on forest herbicide use, in the context of all vegetation management, would be useful. This could be part of a larger forest policy/conservation strategy and would require public involvement. Regulations for herbicide use already exist and are administered by Alberta Environment with referral of applications to AFS.

115 If herbicides are to be a component of the vegetation management policy, there is a need for site-specific rate, timing, and delivery technology research and development studies that will ensure minimum dosage and maximum operational control and safety in the use of forestry herbicides.

Agree that there is a need for such research and development. Some such research has been underway for a number of years involving the Department and industry.

116 Public demonstrations of the cost and effectiveness of different vegetation management techniques should be established as part of a public information/education strategy (see Section 9.3).

Agree. A number of possible demonstration sites already exist, i.e. Kinuso, Calling Lake and Hay River. Other work is required to further document other vegetation control methods particularly with hardwood regeneration. The public should have a role throughout the process.

117

The government and the forest industry should seek ways to reduce the consumption of fossil fuels in all aspects of forest activity and to discourage the conversion of forest land to other uses.

Agree that the government should continue to encourage fuel efficiency and alternate energy sources where it is practical and economical. However, this should apply equally to all sectors, and not just to the forest industry. Because the forests are so important in offsetting the greenhouse effect, forest land conversion to other uses must be closely examined keeping in mind multiple use. In addition, this is also an argument in favor of converting marginal agriculture land back to forest production, wildlife habitat, etc.

118

The government should prepare a strategic plan to mitigate the probable effects of climate change in forests. This could include development of monitoring and predictive capability, enhanced protection, and reforestation and afforestation to increase carbon storage. This plan should be linked to the federal strategic plan.

Agree that such a strategy is required. The climate change group in Forestry Canada is the most appropriate body to address strategic issues through their climate change research.

Action on this recommendation should be dependent upon studies on the effect of climate change on the boreal forests as undertaken by Forestry Canada and other research institutions.

119

The government should support research - beginning with modelling - into the structure and function of all major Alberta ecosystems, both forest and non-forest, to provide ecosystem information relevant to the carbon budget in place of coastal and tropical rainforest information that is often misleading.

Agree that baseline information should be collected. However, ecosystem modelling work is extremely expensive. This is a research area that has been identified in the federal Green Plan.

Whatever information AFS can provide, in terms of ecosystem descriptions, should be linked to the effort in climate change research at Forestry Canada or other research institutions.

120 The Government should review the potential conflict between its wetland drainage program and strategies to reduce the impact of the greenhouse effect on Alberta's forests.

Agree that the impact of drainage on carbon budgets and the resulting implications for climate change must be a consideration in any decision whether to proceed with large-scale operational drainage. At present, there is no comprehensive wetland drainage program currently operational in the province. All installations are small and research oriented.

121 A government reorganization should occur to form a new department (possibly to be called Alberta Natural Resources) with a mandate for resource stewardship and protection. The new department would include the present Forestry, Lands and Wildlife Department (excluding Forest Industry Development) and that part of Recreation and Parks that handles the land resources, parks and planning (excluding tourist promotion). Forest Industry Development and the tourism promotion section of Recreation and Parks should be transferred to Economic Development.

Defer. Any reorganization proposal will be considered in the context of the department's strategic planning effort which is underway, and other related government-wide initiatives. Certainly coordination between different agencies is an important consideration, whether or not they are housed in the same department. A bigger department would not necessarily mean better coordination.

The panel recommendation that Forestry Industry Development Division be moved to Alberta Economic Development and Trade appears to overlook the significant benefits that have resulted from its location in Forestry, Lands and Wildlife. Forest Industry Development has made a major contribution in attracting world-scale forestry projects to Alberta, plus substantial improvements in value added secondary wood processing. This would not have been possible without a very close relationship to the agency responsible for managing the timber resource — the Alberta Forest Service.

The location of Forest Industry Development in Forestry, Lands and Wildlife does not represent a conflict with the department's stewardship responsibilities. On the contrary, sustainable development involves the balancing of economic and environmental considerations. The incorporation of environmental values into development planning is considerably easier and more effective when the responsibilities for stewardship and development are housed in the same department. This argues for retaining Forest Industry Development within the same department as Alberta Forest Service and Fish and Wildlife.

Note as well that Forest Industry Development's role in the department is not unique in that Alberta Forest Service, Public Lands and Fish and Wildlife all have commercial or development responsibilities. A similar relationship also exists in many other provincial government departments.

122

The new department should be reorganized so that there are more integrated resource managers making decisions in the field. For example, regional resource managers (analogous to current forest superintendents) should have expanded responsibilities, including: management of wildlife and fisheries resources; environmental monitoring and protection; timber management; and management of parks, recreation, and wilderness areas in their region. There should be more people at all levels who have increased responsibility for integrated management. Some service functions (the Forest Research Branch and the forest inventory section of the Alberta Forest Service, for example) would have similarly broader responsibility.

Defer. As above, (Recommendation 121) any reorganization will be considered in the context of strategic planning and related activities. Program integration and appropriate levels of delegation are important issues for this plan.

Note that coordination at the regional level is currently formalized through regional resource coordinators and regional resource management committees, involving Forestry, Lands and Wildlife staff and other departments as needed.

123

Administrative units (boundaries and regional offices) should be made uniform among the various divisions of the new department to facilitate coordination of resource management.

Defer. This will also be considered in the context of the departmental strategic plan.

124

The Forest Research Branch of the Alberta Forest Service should be substantially expanded to address immediate needs and to include the resources needed to serve the entire Department of Forestry, Lands and Wildlife or its successor. A tripling of staff and necessary project support would be appropriate. Much of the work of the branch should be managed and focused to address immediate, short-term, practical problems.

Disagree. We recognize the need for a greater research effort by governments, industry, universities and other research institutions. Meeting departmental research needs and evaluating what role the department ought to play in research are important issues.

However, the current period of budgetary restraint does not allow the expansion of our departmental research staff at the present time. The recent reorganization of research functions within the Alberta Forest Service represented one way of continuing the level of research effort in a more cost-effective manner.

We are optimistic that a new federal-provincial forestry agreement will provide additional funding in some of the areas identified by the panel.

125

Alberta Forest Development Research Trust should have its subject mandate similarly broadened, and be renamed the Alberta Forest Resources Research Trust to reflect the change. It should be designed to receive applications from qualified outside scientists, researchers, and graduate students, who would pursue a range of applied and basic research. Funding should be provided by a levy of 10 cents per cubic metre of wood harvested in Alberta, along with matching allocations from the department. At the 1988 level of harvesting, this would produce about $1.6 million. This would give a stable and secure mechanism that would provide a strong foundation for forest research and graduate student education in Alberta.

Agree with the need for more research and greater funding for it over the entire forest resources area. The mandate of the trust fund is being broadened under a bill currently before the legislature (spring, 1991). We also agree that there should be greater support from the forest industry for research. Use of a levy and the trust fund may not be the most effective means of accomplishing this, however. The Alberta Forest Research Advisory Council (AFRAC) is currently evaluating alternative funding mechanisms.

126

The province should encourage and support research and development by federal agencies like Forestry Canada and the Canadian Wildlife Service with funding support from such sources as the Forest Resources Development Agreement, the Forest Development Research Trust, the Wildlife Research Institute, and Wildlife Habitat Canada, where proposals have technical and scientific merit and relevance to priorities set through the Alberta Forest Research Advisory Council.

Agree. We already encourage and support research by these agencies and others.

AFRAC coordinates research needs and priorities in forest management research in this province. Its membership includes federal government representation, as well as provincial government, industry and industry representatives. Consequently, AFRAC is in a position to encourage research by any or all of these agencies.

127

A mechanism should be established to ensure adequate priority and funding for longer-term and more basic research within the Alberta Forest Development Research Advisory Council.

Agree. A mechanism for establishing priorities has already been established and is working well. The Alberta Forest Research Advisory Council sets priorities for all forest research in Alberta. The broad base of membership in AFRAC, including industry, the federal and provincial governments and universities, ensures that its recommendations influence research, no matter who carries it out. AFRAC has confirmed support for both basic and applied forest research.

128

The panel encourages Alberta Forestry, Lands and Wildlife and forest management agreement holders to continue to implement a formal public participation scheme, periodically reviewed, with the intent of increasing effective public involvement at all levels of policy making and planning.

Agree that the new process for public involvement in forest management planning must be supported. We must continue our efforts to make the process understood, amenable to public input, and satisfactory to all parties in effecting forest management planning and operations of a high standard.

We also agree that effective public involvement is needed at other significant levels of policy making and planning. Many of these policy areas are identified under other recommendations.

129

A forest interpretive centre highlighting the ecology, history, and significance of forests to Alberta's past, present, and future should be established at an existing appropriate rest area along a major highway in the Green Area, to help Albertans, and urban dwellers in particular, to understand the forest resource and the industry.

Agree that the concept has merit. Because of the limited government funding available, any centre is going to have to depend primarily upon industry, community and private support.

130

The Department of Forestry, Lands and Wildlife should establish and fund an independently directed popular magazine providing a forum for land use issues and a source of information on forest resources.

Agree that the concept has merit particularly in providing a forum for land use issues and resource information. It must be considered relative to other priorities and our limited budget.

131

The minister should review the enforcement of timber management regulations to ensure they are interpreted fairly, supervised adequately and that corrective action is applied equally in all cases of contravention.

Agree that periodic reviews are important. A review of the timber management regulations with regard to both the currency of the regulation and the relevant penalty structure has recently been done. Application of penalty provisions is reviewed on an ongoing basis with the objective of achieving uniformity and consistency.

132

Professional foresters who knowingly and deliberately ignore and contravene the provisions of the timber management regulations, causing damage to the forest resource, should be censured by the Alberta Registered Professional Foresters Association.

Agree. The Alberta Registered Professional Foresters Association has a code of ethics to do exactly what this recommendation states, and its operating legislation, the Forestry Profession Act, gives it the power to reprimand, strike or suspend from membership or take other action against its members under appropriate circumstances. Note that this is a matter for the association, not the department.

133

Membership in the Alberta Registered Professional Foresters Association should be mandatory for professionals performing certain key duties, including the preparation of forest management plans.

Mandatory membership would require amendment of the Forestry Profession Act in order to make the association restrictive, as opposed to the current permissive legislation. This is not for the department to say; the onus is on the association to bring forward a proposal if it desires such a change.

The department's main concern is that highly trained, competent people carry out the "key duties". The reciprocal concern is that restrictive legislation may prevent trained, competent people from performing duties that they now do well. It would undoubtedly impose a financial burden on some segments of industry.